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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/695,755	10/24/2000	Michael A. Nelson	CROSS1400-1	2697

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SPRINKLE IP LAW GROUP
1301 W. 25TH STREET
SUITE 408
AUSTIN, TX 78705

EXAMINER

RYMAN, DANIEL J

ART UNIT	PAPER NUMBER
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2616

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/28/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/695,755

Applicant(s)

NELSON ET AL.

Examiner

Daniel J. Ryman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6, 7, 9, 10, 12-14 and 19-23 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 8, 11 and 15-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Examiner acknowledges Applicant's filing of an RCE on 7 November 2006.
2. Applicant's arguments with respect to the rejections of claims 1-3, 6, 7, 9, 10, 12-14, and 19-23 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 7, 9, 12-14, and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Epps et al. (USPN 6,731,644), of record, in view of Muller et al. (USPN 6,128,666).
5. Regarding claims 1, 9, 19, 20, and 23, Epps discloses a method and system comprising: receiving a plurality of frames (col. 3, lines 11-36 and col. 4, lines 58-67); storing the frames in a receive buffer (ref. 215), wherein the receive buffer is configured to be accessed in a first-in-first-out fashion (Fig. 3; col. 5, lines 47-60; and col. 8, lines 29-34) where physically there is only a single receive buffer that stores the header and tail portion of the frame; storing header information corresponding to each of the frames in a header storage (ref. 480), wherein the header storage is configured to provide access to the header information in the same order as the frames (Figs. 3 and 4; col. 5, lines 47-60; and col. 9, lines 34-41); retrieving header information from the header storage, wherein the header information corresponds to a first frame

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(col. 5, line 61-col. 6, line 6; col. 9, lines 1-15; and col. 9, lines 34-41); prior to the first frame reaching a head position in the receive buffer, making a routing decision for delivering the first frame to its destination based upon the header information (col. 5, line 61-col. 6, line 6 and col. 9, lines 1-22) where the routing decision is made in an intermediate stage of the pipeline process (the TLU stage: col. 6, lines 36-42) and where the packet is transferred once it has reached the final pipeline stage; retrieving the first frame from the receive buffer (col. 5, line 61-col. 6, line 6 and col. 9, lines 11-22) where the "frame" is retrieved from the receive buffer and sent transmit buffer; and routing the first frame based upon the routing decision (col. 3, lines 22-34 and col. 9, lines 1-22).

Epps does not expressly disclose that the header information is duplicated header information. Rather, Epps discloses that the header information is stripped from the received packet, such that a joining circuit must rejoin the header and the payload when the packet is ready to be transmitted (col. 5, lines 45-55 and col. 7, lines 5-10). Muller teaches, in a system for examining packet headers, copying the packet headers and forwarding these copies to a search engine (col. 6, line 67-col. 6, line 17, where the search engine determines how the packet is to be routed). Muller copies rather than extracts the header in order to modify or update header information only when necessary to preserve end-to-end error robustness (col. 5, lines 44-55). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to duplicate the header information, rather than extract the header information, in order to preserve end-to-end error robustness by modifying or updating the header information only when necessary.

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6. Regarding claims 2, 21, and 22, Epps in view of Muller discloses that the routing decision for the first frame is made while a preceding frame is being routed (Epps: col. 3, lines 22-36 and col. 5, line 61-col. 6, line 6).

7. Regarding claim 3, Epps in view of Muller teaches that routing the first frame comprises transmitting the first frame to the transmit buffer of a destination determined by the routing decision (Epps: col. 1, lines 51-56; col. 3, lines 22-34; and col. 9, lines 1-22).

8. Regarding claims 7, 12, 13 and 14, Epps in view of Muller teaches that the receive buffer is a First-in-first-out (FIFO) buffer having a head position and a tail position, wherein entries are written to the tail position and are promoted through the FIFO buffer to the head position, and wherein retrieving the first frame from the receive buffer comprises reading the frame at the head position (Epps: Fig. 3; col. 5, line 51-col. 6, line 6; and col. 15, lines 61-65).

9. Claims 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Epps et al. (USPN 6,731,644), of record, in view of Muller et al. (USPN 6,128,666), as applied to claims 1 and 9 above, and in further view of Darnell et al. (US 6,317,415), of record.

10. Regarding claims 6 and 10, Epps in view of Muller does not expressly disclose snooping on received frames to identify the header information corresponding to each of the frames.

Darnell teaches, in the analogous field of communications, using a snoop circuit (ref. 120) for snooping on received frames to identify the start of a frame (Fig. 5 and col. 11, lines 53-col. 5, lines 20-43). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to snoop on received frames to identify the header information corresponding to each of the frames since snooping is well known in the art as a means for identifying portions of a data stream.

Allowable Subject Matter

11. Claims 4, 5, and 15-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not disclose or fairly suggest tying a specific timer to a header in the header buffer or a frame in its buffer to indicate the amount of time that a frame has been in the buffer.

12. Claims 8 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. While Epps suggest that the processor will not sit idle and wait for a header to reach the head of a queue, Epps does not expressly disclose how the processor will ensure that it will not sit idle. Thus, while Epps does not suggest Applicant's bypass circuit, Epps does suggest some mechanism, such as packing headers into the buffer in a manner that eliminates gaps, to ensure that there is no gap in the processing of headers.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nichols et al. (US 4,977,582) and Sang et al. (US 6,577,636) disclose routing/forwarding systems that include storing frame header information.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (571)272-3152. The examiner can normally be reached on Mon.-Fri. 8:00am-4:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Daniel J. Ryman
Examiner
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Daniel J. Ryman